

42. The method of claim 35 wherein the acidic active ingredient is sodium aluminum phosphate.

REMARKS

The remarks below respond to the Office Action mailed November 6, 2002.

Claims 1-35 are pending in the application. With this response, claims 1, 3, 7, 18, 20, 29 have been amended. Claims 36-42 are added. Claims 1-42 remain in the application for consideration.

This response is timely filed within the three-month deadline from the mailing date of the Office Action.

Enclosed is a check in the amount of \$126.00 for additional claims. If additional fees are required, please charge to Deposit Account No. 50-1775.

Reconsideration and allowance of the claims, as amended, and in light of the following remarks, are respectfully requested.

Rejection Under 35 U.S.C. 112

Claims 1-18, 23, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

According to the Office Action:

Claim 1 is vague and indefinite. It is not clear how the barrier material is structurally related to the acid ingredient and the basic ingredient. If the barrier material is just included in the dough and is not structurally related to the active ingredients, it is not seen how the barrier functions as claimed.

The rejection is overcome by amendment. Claim 1 has been amended to recite that the basic active material is encapsulated. As described in the specification, the acidic active ingredient may optionally also be encapsulated.

The Office Action suggests in claim 3 the use of "the" or "said" with respect to the barrier material, to give proper antecedent basis and to make the claim clearer. Claim 3 has been amended as suggested.

The Office Action states that in claim 5, the language “relatively insoluble” is indefinite because it is not known how insoluble is relatively insoluble. Applicants disagree and the rejection is traversed.

When considered in the context of the claim, the cited language of claim 5 is neither vague nor indefinite. Claim 5 recites an acidic ingredient that is “relatively insoluble” at processing and refrigerated storage temperatures, which dissolves at a baking temperature range. The “relatively insoluble” ingredient does not substantially dissolve at processing and refrigerated storage temperatures, but does substantially dissolve at a baking temperature range. (See, e.g., the specification at p. 13, lines 4-11 and from p. 13, line 24 through page 14, line 16.) The cited language is therefore not indefinite or vague, and would be understood and objectively ascertained by the skilled artisan. Thus, the rejection of the cited language should be withdrawn.

The Office Action objects to the phrase “the aqueous phase” of claims 5 and 10 as being “unclear because the claims have not set forth an aqueous phase of the dough.” The term “aqueous phase” refers to the liquid water ingredient of the dough composition. Such a phase is a known component of a dough composition as described in the specification, and is not indefinite. These grounds of rejection, therefore, should also be withdrawn.

In claims 18 and 27, the Office Action queries as to the meaning of “fat-type.” This language is removed from these claims.

According to the Office Action, the hand written insertion at claim 23 is not clear. This language is not unclear in its intended meaning of a synthetic analog of palm oil and a synthetic analog of palm kernel oil. Palm oil and palm kernel oil are different, and this language does not recite palm kernel oil twice, as asserted in the Office Action.

Rejection Under 35 U.S.C. 102

Claims 20, 25, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Atwell et al.

The rejection is overcome.

Claim 20 has been amended to depend from claim 1. Claim 1 does not stand rejected as anticipated by the Atwell et al. reference. Thus, with this amendment, the rejection of claim 20 as anticipated by Atwell et al. can be withdrawn. Similarly, the rejections of claims 25 and 26, dependent on claim 20, can be withdrawn.

Rejection Under 35 U.S.C. 103

Claims 1-19, 21-24, 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atwell in view of Katz et al.

According to the Office Action:

Atwell et al. does not disclose the encapsulating material for the leavening agents, the amount of leavening agent and the baking temperature as claimed.

Katz et al. disclose a leavening system in which the leavening agent is coated with a partially hydrogenated palm oil.

It would have been obvious to one skilled in the art to use the vegetable oil taught by Katz et al. to encapsulate the leavening agents of Atwell et al. because Katz et al. teach that the oil is used to coat leavening agents.

The rejection is traversed.

Claims 1, 29, and dependent claims

Applicants' claims 1 and 29 recite a dough composition comprising "acidic active ingredient . . . selected to have a relatively low solubility in the dough composition below baking temperature." In this respect, these claims recite inventions that newly consider solubility factors in selecting an acidic chemical leavening agent, in a way that provides an inventive dough composition that releases less carbon dioxide during processing and storage compared to doughs that use acidic agents that are relatively more soluble at those conditions. The cited prior art does not teach or suggest to consider solubility of an acidic agent in selecting one acidic agent from among all of those that were known to be available.

According to Applicants' specification:

Some especially preferred acidic active ingredients can exhibit a low solubility at processing or refrigerated storage temperatures . . . and can therefore remain substantially in solid suspension until baking, where at a higher temperature . . . the acidic active ingredient becomes substantially soluble, (e.g., becomes at least 90% dissolved).

According to one aspect of the invention, the importance of solubility properties of the acidic active ingredient, especially if not separated from the bulk dough composition, is that dissolution of acidic active ingredient facilitates reaction between the basic and acidic active ingredients. The invention seeks to control that reaction, and contemplates that such control can be achieved, at least in part, by selecting the solubility of the acidic active ingredient at different temperature ranges . . .

Applicants' specification at p. 14, lines 10-23.

Claims 1 and 29 as amended additionally recite the use of an encapsulated basic chemical leavening agent in combination with the relatively low solubility acidic agent. The cited prior art fails to teach or suggest using the specified acidic agent in combination with an encapsulated basic agent.

The primary reference, Atwell et al., fails to teach or suggest a dough composition containing an acidic agent selected to have relatively low solubility at below baking temperature. Atwell et al. additionally fail to teach or suggest the use of such an acidic agent in specific combination with an encapsulated basic chemical leavening agent. These features, which are recited in Applicants' claims 1 and 29, would not have been obvious over the primary reference, Atwell et al.

Looking at the Atwell et al. reference (column 5, lines 18-29), it describes a large variety of different "leavening acids":

Leavening acids are sodium, calcium, or magnesium salts of ortho, pyro and complex phosphoric acids in which at least two active hydrogen ions are attached to the molecule. They may also be organic acids, salts of organic acids or lactones. Examples of leavening acids include monocalcium phosphate monohydrate (MCP), monocalcium phosphate anhydrous (AMCP), sodium acid pyrophosphate (SAPP), sodium aluminum phosphate (SALP), dicalcium phosphate (DCP), dicalcium phosphate dihydrate (DPD), dimagnesium phosphate (DMP), sodium aluminum sulfate (SAS), glucono-delta-lactone (GDL), potassium hydrogen tartrate (cream of tartar), and the like.

The list of leavening acids from the Atwell et al. reference includes acids that have a range of solubilities, including acids that are freely soluble at below baking temperature, such as GDL. Even more generally, Atwell et al. discuss that the leavening acid can include, generally, organic acids, salts of organic acids, or lactones. In their broad description of leavening acids, Atwell et al. make no mention or suggestion to select an acid that has a relatively low solubility at below baking temperatures. The Atwell et al. reference includes merely a general list of conventional “leavening acids” having a range of solubilities specifically including GDL, which is freely soluble at 25°C. The reference treats all of the listed acids as equivalent, and makes no distinction between the different acids with respect to their solubility at below baking temperature. The reference by itself does not teach or suggest, or otherwise identify a preference for using an acidic active ingredient having a “relatively low solubility,” as recited in Applicants, claims 1 and 29. In fact, the contrary is more true; the Examples of the reference use only GDL, which is freely soluble at 25°C. Further, the reference describes the use of a pressure release mechanism to release carbon dioxide that accumulates inside of packaging--thus, there is no teaching or suggestion or motivation to use a low solubility acidic agent to avoid reaction of agents that produce carbon dioxide.

The reference furthermore fails to teach or suggest to use a relatively low solubility acid in combination with an encapsulated basic agent, as is more specifically recited in claims 1 and 29. The reference at column 5, lines 33-37, generically recites:

Either or both of the leavening acid and leavening base may be encapsulated, so that the leavening reaction does not substantially take place until the proper conditions have been achieved in the dough . . . (Emphasis ours.)

This generic description of optional encapsulation of a basic or acidic leavening agent, or both, and the list of leavening acids above, would not have taught or suggested to the skilled artisan to select from the various possible combinations available, a combination of a relatively low solubility acidic leavening agent in combination with a basic leavening agent, as recited in claims 1 and 29.

The secondary reference, by Katz et al., fails to remedy the shortcomings of the primary Atwell et al. reference. The Katz et al. reference, according to the Office action,

teaches that “[vegetable] oil is used to coat leavening agents.” Even if Katz et al. does stand for this teaching, such a teaching would still fail to remedy the other identified shortcomings of the primary reference. That is, the secondary reference still would fail to teach or suggest the combination of a relatively low solubility acidic active ingredient in combination with an encapsulated basic active ingredient. The cited combination of references, therefore, fails as a basis for rejecting Applicants’ independent claims 1 and 29 under 35 U.S.C. § 103.

Claims that are dependent on claims 1 and 29 would have been further non-obvious over the cited combination of references. For example, the cited references do not teach or suggest to select an acidic active ingredient to have solubility behavior similar to SALP as recited in amended claim 7, from among all of the acidic active ingredients that had been generally known or that are described in the cited references, in combination with an encapsulated basic active ingredient; or to select a barrier material to have a solid fat index as recited in claim 18.

It is respectfully requested that the rejection of claims 1 and 29 and claims dependent thereon, over the primary reference Atwell et al. in view of Katz et al., be withdrawn.

Claims 27, 35, and dependent claims

The Office action generally asserts that claims 27 and 35 would have been obvious over the primary reference by Atwell et al. in view of Katz et al.

The rejection is traversed.

Claims 27 and 35 recite dough compositions and methods that relate to a barrier material having a solid fat index of at least about 50% at 75F.

The Office action includes no explanation of how either reference would have suggested to use a barrier material having a solid fat index of at least about 50% at 75F. Looking at the cited references, neither one teaches or suggests the use of this specific type of barrier material.

The Atwell et al. reference is entirely silent on specific types of barrier materials.

The Katz et al. reference discusses a chemical leavening component coated with a partially hydrogenated vegetable oil, preferably, palm oil. This also fails to teach or suggest the specific use of a barrier material having a solid fat index of at least about 50% at 75F. All partially hydrogenated vegetable oils or palm oils do not have a solid fat index of at least about 50% at 75F. And the reference provides no indication that oils having the claimed solid fat index should be selected over those that do not. The reference therefore cannot be said to teach or suggest using barrier material selected to have a solid fat index of at least about 50% at 75F. As such, the rejection of claims 27 and 35, and any claims dependent thereon, as obvious over the cited combination of references, should be withdrawn.

The Examiner is invited to contact the undersigned, at the Examiner's convenience, should the Examiner have any questions regarding this communication or the present patent application.

Respectfully Submitted,

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